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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

VO, TUYET THI

ART UNIT PAPER NUMBER

2821

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,500

Applicant(s)

HEO, EUN-GI

Examiner

Tuyet Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-18 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) ✓
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

FILED 5/07/02 AND 10/25/02

DETAILED ACTION

1. The Korean reference 1999-30025 of information disclosure statement filed October 25, 2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A phrase "a voltage drop experienced by said bus electrodes" is not clear how the bus electrodes affect the drop of the voltage.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 5-8 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Sano et al. (US Pat. 6,577,061), hereinafter Sano.

Regarding claim 5, Sano discloses a plasma display panel comprising:

a first/front substrate (11);

first/sustain and scan electrodes (41) formed in a striped pattern on a bottom of the front substrate;

a bus electrode (42) formed on a bottom of each said first/sustain and scan electrodes;

a dielectric layer (17) formed on a bottom of the first/front substrate to cover the sustain, scan and bus electrodes;

a protective layer (18) formed on a bottom of the dielectric layer;

a second/rear substrate (21) disposed opposite the first/front substrate;

a second/address electrode (22) formed on a top of the second/rear substrate and being orthogonal/non-parallel to direction of the sustain electrodes;

partition walls (29) formed on the second/address electrodes (22) parallel to the second/address electrodes, adjacent pairs of the partition walls defining discharge spaces and ones of discharge spaces having different area (Fig. 5A); and

red (38R), green (38G) and blue (38B) phosphor layers deposited on corresponding insides of pairs of the partition walls.

Regarding claims 6-8 and 13-15, Sano further discloses the plasma device comprising the areas of ones of the discharge spaces change in accordance with a voltage drop inherently from the peripheral to the center of the panel via line resistance of bus electrodes, wherein the areas of ones of the discharge spaces change/decrease in accordance with a distance of the corresponding pairs of the partition walls from a center of the second substrate (Fig. 16A). The amount of phosphor layer increases due to increase of discharge space toward the center of the second substrate (Fig. 5A).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 9-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano in view of Sakai et al. (US Pat. 6,498,430), hereinafter Sakai.

Regarding claims 1, 2, 16 and 17, Sano discloses a plasma display panel comprising:
a first/front substrate (11);

first/sustain and scan electrodes (41) formed in a striped pattern on a bottom of the front substrate;

a bus electrode (42) formed on a bottom of each said first/sustain and scan electrodes;

a dielectric layer (17) formed on a bottom of the first/front substrate to cover the sustain, scan and bus electrodes;

a protective layer (18) formed on a bottom of the dielectric layer;

a second/rear substrate (21) disposed opposite the first/front substrate;

a second/address electrode (22) formed on a top of the second/rear substrate and being orthogonal/non-parallel to direction of the sustain electrodes, wherein another dielectric layer to cover the address electrodes (col. 4, lines 4-11);

partition walls (29) formed on the second/address electrodes (22) parallel to the second/address electrodes, adjacent pairs of the partition walls defining discharge spaces and ones of discharge spaces having different area (Fig. 5A); and

red (38R), green (38G) and blue (38B) phosphor layers deposited on corresponding insides of pairs of the partition walls.

However, Sano does not disclose partition walls of the plasma display device having different widths.

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Sakai discloses the plasma display device (Fig. 5) having different discharge spaces (D1-D3) due to change of different widths of the partition walls (A-C)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize different widths of partition walls taught by Sakai into the Sano plasma display device in order to perfect luminescence of all surface of a plasma display panel.

Regarding claims 9-12 and 18, Sano in view of Sakai discloses substantially the claim invention as noted above and Sakai further teaches:

widths of ones of partition walls change in accordance with variation of luminance of three primary colors energizing by a voltage supplied via bus electrodes (Abstract and col. 7, lines 4-27); and

widths of the partition walls (A, B, C) increase in accordance with a distance of the partition walls from a center (from partition wall A) of the second substrate (Fig. 5).

Allowable Subject Matter

8. Claim 4 is are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 3 is rejected as noted above but would be allowable if rewritten with clarification of the claim language in independent form including all of the limitations of the base claim and intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior fails to disclose a luminescence of the plasma display panel is maintained while changing/increasing widths of each of partition walls from a peripheral of the rear substrate toward a center of the rear substrate in proportion to a voltage drop due to line resistance of bus electrode as required in claim 3 or the discharge spaces gradually become narrower from a center of the rear substrate toward a periphery of the rear substrate corresponding to a change in the widths of each of the partition walls as required in claim 4.

Citation of pertinent prior art

10. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Yanagida et al. (US Pat. 6,501,444) discloses plasma display panel capable of being easily driven and definitely displaying picture.

Hirao et al. (US Pat. 6,424,095) discloses AC plasma display panel.

Chen et al. (US Pat. 6,420,835) discloses color plasma display panel.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyet Vo whose telephone number is 703 306 5497. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 703 308 4856. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 7722 for regular communications and 703 308 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



Tuyet Vo

July 20, 2003